

Remarks

This is a Request for Continuing Examination in connection with a Withdrawal of Appeal. Pending Claims 18 through 45 have been cancelled and new Claims 46 through 60 have been added. Claims 18 through 42, 44, and 45 were rejected in a Final Office Action mailed August 5, 2005 as unpatentable over Wen et al. U.S. Patent No. 4,157,959 and Masuda et al. U.S. Patent No. 5,248,415, considered in combination. Claim 43 was rejected as unpatentable over the Wen and Masuda references considered in combination with Whetsel U. S. Patent No. 5,362,384. After the Notice of Appeal was filed on February 3, 2006, information was recalled not yet of record in this application about activity of others prior to the earliest effective filing date of December 10, 1996 of the ultimate parent Provisional Application No. 60/032,643. This prior activity relates to the Parsons Engineering Science ("PES") filter described in the Rules 56 and 132 Declaration of William F. Foreman, III, P.E. that accompanies this Preliminary Amendment in a concurrently filed Information Disclosure Statement. These prior activities of others are brought to the attention of the Examiner for consideration in the absence of any admission that these prior activites constitute prior art within the meaning of 35 USC Section 102. Mr. Foreman's declaration is also directed to the cited Wen and Masuda references and the relationship of the subject matter of the Masuda reference to the PES activity.

The Wen reference describes a convertible or semifluidized filter having a granular filtration media. Although the filter bed can be packed by lowering a plate to preclude fluidization, or raised to fluidize a lower portion or all of the bed, the media itself is not compressible, in direct contrast to the media used in the apparatus of the pending claims. Granular media in a semifluidized bed works according to different principles than the compressible fibrous media recited in the claims. Wen discloses fixed beds of ever decreasing size, meaning that the size of the fluidized portion of the bed increases, but Wen does not disclose or suggest that the filter bed has a porosity gradient as defined by Applicant proceeding from more to less porous in the axial flow direction from the influent to the effluent. In Wen, a progressively increasing lower portion of the bed becomes fluidized and a cake of fines formed in the bottom of the fixed bed gradually moves to the top of the bed. In contrast, in the practice of the invention as recited in the pending claims, the fixed bed typically is not fluidized until washing. Particles are captured throughout the filter depth, larger particles in the lower, more porous portions of the bed and smaller particles in the upper more compressed portions of the bed, progressively. No cake of fines forms that progressivley moves upward through the filter bed in the operation of the apparatus of the invention.

No fluidized bed/packed bed interface exists, and such an interface is not the same and does not suggest a porosity gradient across a progressively compressed fixed bed as recited in Applicant's claims.

Semifluidized filter apparatus including granular filtration media as described in Wen is not analogous to the invention recited in Applicant's claims in which the media is a substantially spherical and compressible filtration media of individual, fibrous lumps of bundled, crimped fibers. Wen is directed to using a convertible or fluidizable bed of granular materials for removing suspended particulates from gases or liquids when such beds previously had been known, as stated in Wen, only in connection with chemical reactions and physical fluid-solid contact processes, not for filtration. Wen is not reasonably pertinent to Applicant's invention, which, while directed to the field of filtration, has nothing to do with using a fluidizable bed of granular materials or a filter of convertible media, but is instead directed to solving problems encountered in apparatus including substantially spherical and compressible filtration media of individual, fibrous lumps of bundled, crimped fibers.

The skilled artisan would not look to semifluidized bed technology to solve the problems encountered in early use of the media recited in Applicant's claims. The skilled artisan would not look to Wen to solve the problems of a filter of the media claimed by applicant functioning as a septum or surface filter as pointed out at paragraph 14 in the Rule 132 Declaration of George Tchobanoglous, Ph.D., which was submitted in a Preliminary Amendment filed March 31, 2004. Certainly, there is no scintilla of a disclosure or suggestion of the solution to the surface filter problem to be found in the Wen reference.

There is no disclosure or suggestion in the Masuda reference of the invention as recited in Applicant's claims. As pointed out at paragraphs 12, 15, and 25 in the Rules 56 and 132 Declaration of William F. Foreman, III, P.E., the problems of rapid clogging, blinding, and washing at a reasonably low flow rate with waste water of filters having media of the type recited in Applicant's claims are not even recognized among early users, including the Masuda filter and the Parsons Engineering Science filter.

Whetsel U.S. Patent No. 5,362,384 merely discloses the concept of a turbidity monitor and does not disclose or suggest any of the elements of Applicant's claims reciting a filter of the structure and media recited by Applicant.

There is no disclosure or suggestion to consider any or all of the Wen, Masuda, Whetsel or other references of record in combination. The Examiner has stated that the Tchobonoglous declaration is not persuasive since it does not include comparative data regarding Masuda. While comparative data should not be necessary on the facts recited in the Tchobonoglous and Foreman declarations even if the references are considered in combination, for the reasons stated below, comparative data is not relevant to the determination of whether the references properly are combinable. Both the Tchobonoglous and

Foreman declarations support the conclusion that the references are non-analogous, should not be combined, and would not be considered in combination by the skilled artisan. Foreman shows that the Masuda and PES filters are septum filters different not just in degree, but in kind from that of Wen and the Applicant's claims.

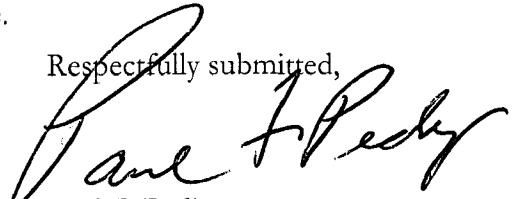
However, even if considered in combination, there is no disclosure or suggestion to substitute the Masuda media for the Wen media, for the reasons stated above. There is no disclosure or suggestion in any of these references of the elements of Applicant's claims defining a filter as recited in the claims. There is no disclosure or suggestion of a fixed filter bed of media compressed to provide a porosity gradient across the bed proceeding progressively from more to less porous in the flow direction, that can be expanded during filtration, and that includes cleaning the media in an uncompressed condition in the same flow direction using a low volume of influent. No single reference discloses or suggests these elements in combination and there is no suggestion in the references to combine the references to arrive at Applicant's solution. On the contrary, the references indicate a failure even to recognize the problem Applicant has solved.

The Tchobonoglou and Foreman declarations are probative of and fully support a conclusion of nonobviousness of the invention as recited in the pending claims. Numerical data comparing the operation of filters of record to the Applicant's claims should not be required where the Declarants each have stated that in their direct experience using the Masuda filter, the filter clogs rapidly and has to be washed too frequently with too great a volume of water. The Foreman declaration states that in his direct experience, Mr. Foreman observed similar problems characteristic of a septum filter in the PES filter. Exhibit A accompanying the Tchobonoglou declaration states that no formulas even existed with which to predict performance of Applicant's filter, as compared to granular filter media that has fixed properties, and derives new formulas for Applicant's filter, fully supporting the conclusion that the invention is nonobvious.

In light of the evidence of record and for the reasons stated above, all of Applicant's Claims 46 through 60 are now in condition for allowance and an early indication of the allowability of these claims is earnestly solicited.

The Applicant is unaware of any fees due for this Response and Amendment. Applicant submits a \$395 fee for a Request for Continuing Examination and a \$1080 fee for a Petition for Extension of Time via credit card through the EFS Web Electronic Filing Service. If the Examiner determines, however, that additional fees are required or if any credits are due, the Examiner is hereby authorized to charge or credit Deposit Account No. 50-0332 as appropriate.

Respectfully submitted,



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